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# INTERNATIONAL DECADE FOR NATURAL DISASTER REDUCTION

## Report of the Secretary-General

## Addendum

As stated in the report of the Secretary-General on the International Decade for Natural Reduction (A/48/219-E/1993/97), the present addendum contains the annual report of the Scientific and Technical Committee to the Secretary-General (see annex).

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ANNEX

## Annual report of the Scientific and Technical Committee to the Secretary-General

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# I. INTRODUCTION

1. In its first annual report to the Secretary-General in 1991 (A/46/266/Add.1-E/1991/106/Add.1) the Scientific and Technical Committee made specific recommendations for disaster-reduction activities and proposed a number of policy guidelines which were subsequently adopted and endorsed by the General Assembly in its resolution 46/149 of 18 December 1991. Having thus established a framework for future action, including the specific targets to be attained by each country by the year 2000, the Committee, in its second year, concentrated on the development of disaster-reduction strategies and projects by national bodies as well as international organizations and scientific institutions.

2. The information provided in the present report reflects the most important parts of the work carried out by the Scientific and Technical Committee over the reporting period of its third and fourth sessions, held at Geneva in March 1992 and at New Delhi in February 1993, respectively.

3. On average, over the past 30 years, economic losses caused by disasters have trebled: from $4 billion in the 1960s, losses increased to $7 billion in the 1970s, reaching $12 billion in the 1980s. Over the period of 1991 to 1992, this worsening trend of disaster losses continued. Overall damages reached a world-wide total of $44 billion, including $11 billion of insured losses (from 434 disasters) in 1991 alone. Losses continued at a high level in 1992 when Hurricane Andrew struck Florida and Louisiana (United States) causing $22 billion worth of damage in just a few hours. Of this sum, insured losses accounted for $16 billion, while government relief expenditure accounted for about $6 billion. Untold additional losses were uninsured.

4. In addition, since the beginning of the Decade there has been increasing awareness of the link between the major impact of natural disasters on economic development in many countries. This interaction of development and environment was the theme of the United Nations Conference on Environment and Development (the Earth Summit) held at Rio de Janeiro in June 1992, a major outcome of which was the adoption of a plan of action (Agenda 21), 1/ which advocated, inter alia, the incorporation of measures for reducing disaster losses in development planning.

5. In 1992, the Committee directed its attention to the priority activities identified at its March meeting, most of which were designed to help build national capabilities for formulating and implementing disaster-prevention strategies. These priorities included:

(a) Development of systems for drought management and reduction of economic losses from drought;

(b) Preparation of guidelines on safe design of buildings, especially non-engineered structures;

(c) Encouragement of advancement of scientific and technical research as a basis for improved mitigation actions, and dissemination of research results;

(d) Implementation of a public information strategy;

(e) Promotional efforts to raise resources to support national and international disaster-mitigation activities within the Decade;

(f) Establishment of systems for quantitative measurement of progress and benefits in achieving the targets of the Decade;

(g) Initiating analyses of economics (benefits and costs) of disaster-mitigation actions;

(h) Assistance in the development, compilation and dissemination of guidelines for comprehensive risk assessment and mapping methods;

(i) Contribution to the development of databases on natural disasters and on prevention, mitigation, warning and preparedness systems;

(j) Identification of additional channels and methods for further involving the scientific community and the private sector in realizing Decade goals, as specifically called for in General Assembly resolution 44/236;

(k) Preparing for the mid-term review of the Decade in 1994, including preparatory work towards the World Conference on Natural Disaster Reduction, to be held at Yokohama, Japan, in May 1994.

## II. NATIONAL PROGRAMMES AND PROJECTS FOR DISASTER MITIGATION

6. The information received from national committees clearly shows that progress being made in disaster-reduction programmes in vulnerable countries is very uneven. National committees and focal points for the Decade have been established in 104 countries, 30 of which have initiated a total of over 100 Decade-related projects. Nevertheless, the actual level of activity in many countries is still too low, and 32 countries have failed to respond to repeated attempts to elicit information about their programmes and activities. This lack of response would appear to suggest that these countries have not proceeded beyond their initial endorsement of the aims of the Decade. However, this situation also may reflect the lack of information about disaster reduction activities that are being carried out independently of the Decade. Thus it is clear that further initiatives in support of systematic national activities are necessary, especially taking into account that in each country a large number of participants from all sectors of society must be involved in disaster mitigation.

7. The circulation of information on disaster-reduction plans already formulated and being implemented can provide useful guidance for those countries still at an early phase. Meetings and workshops have proved to be particularly useful for this purpose. The last two sessions of the Scientific and Technical Committee, for example, provided opportunities for many such exchanges between a variety of countries at different stages of development (e.g. Australia, Bangladesh, China, Colombia, Costa Rica, India, Jamaica, Japan, Philippines, Spain, Switzerland, Tunisia, United States and Vanuatu). In Latin America, regional meetings and workshops have proved effective in drawing upon local experience in formulating disaster-mitigation plans while encouraging regional and subregional cooperation. In order to build on the results of these

meetings, development agencies, financial organizations and subregional institutions concerned with disaster mitigation and economic development will be encouraged to participate more actively in future events.

National reviews of disaster vulnerability

8. As a follow-up to these regional meetings and to assist in the preparation of national mitigation plans as part of the overall national planning process, the Scientific and Technical Committee proposed that each participating country conduct an in-depth review of its disaster-vulnerability, the first of the Decade targets. If required, the Committee would help provide expert assistance to complement in-country expertise, through the direct participation of its members or staff from the specialized agencies and other organizations of the United Nations system, as well as from national committees. It is envisaged that initial reviews of available information can be accomplished in one to two weeks, with the focus on identifying specific Decade targets at the country level as has been done, for example, by the national authorities in Colombia. For the World Conference, each country is being asked to prepare national reports on progress towards meeting the three main Decade targets and plans for the second half of the Decade.

Recommended action

9. In addition to the need for renewed political support by the Secretary-General and the General Assembly, the Scientific and Technical Committee also identified a number of activities to be undertaken in order to strengthen the Decade programme, namely:

(a) On a regional basis, requesting the assistance of members of the Special High-Level Committee and of the Scientific and Technical Committee to mobilize inactive countries through the national reviews outlined above, as well as through contacts with disaster mitigation experts and personalities, for example, parliamentarians, government officials, scientists, and the private sector. In this effort, the support of regional and United Nations organizations, including United Nations Resident Coordinators is being sought;

(b) Establishing partnerships between national committees and organizations of countries at different development stages (as for example those planned by the German National Committee with developing countries from Latin America, North Africa and Central Asia; India with several neighbours and the ADPC; and the US Geological Survey with Latin American countries). The Scientific and Technical Committee recognized the importance of the concept of "Partners in Natural Disaster Reduction". Criteria are being drafted to assist in identifying potential partnerships for further consideration at the fifth session of the Scientific and Technical Committee;

(c) Appointment of more regional experts in support of national activities related to the Decade and in cooperation with focal points in the Decade, regional organizations or fully active national committees, as in the present arrangement for Latin America and the Caribbean supported by Sweden;

(d) Transmission of the existing guidelines on international, national and demonstration projects to national committees and focal points and United

Nations field offices in developing countries for use in preparing project proposals;

(e) Providing advice on and promoting selected national projects for sponsorship by potential donors, as requested;

(f) Preparing for the next session of the Scientific and Technical Committee a set of guidelines for national committees on those activities considered most relevant for the success of the Decade. In particular these will address the role of national committees in the defining economic policies, and how development and technical assistance (national and international) should take into account the major disaster mitigation needs.

Country responsibilities

10. Of special importance is the link with planning for sustainable development, because the extent of a country's exposure to natural and other hazards is directly related to its overall developmental situation. Vulnerability is often increased by man-made actions, such as the construction of dwellings in dangerous areas, inadequate protection of the infrastructure for essential services, and implementation of development projects with insufficient regard to disaster scenarios and their potential consequences for the surrounding population and environment.

11. To protect itself against such mounting hazards, each country should review the vulnerability of planned or ongoing development projects so that they are designed to support rather than counter national disaster-mitigation efforts. To this end, every country should formulate an integrated, multi-disciplinary programme to reduce the impact of future natural hazards by learning from past disasters and optimizing benefits to be derived from international cooperation.

12. As an example of what can be planned and implemented in these areas, and concerning drought in particular, is the report made by Mr. R. C. A. Jain (Focal Point for the Decade in India) to the Scientific and Technical Committee on the very successful Indian programme for drought management. Its success is based on broadly reliable seasonal forecasts by the Indian Meteorological Department, careful monitoring of key water and agricultural parameters and a set of well-conceived early intervention measures. In earlier droughts, more than 80 per cent of funds were spent on relief measures, but after the adoption of this programme, in the very severe drought of 1987, 94 per cent of government funds went to development activities, and economic and human losses were greatly reduced.

13. The Climate Unit of the United Nations Environment Programme (UNEP) has produced a Drought Management Manual based in part on the Indian experience. The Scientific and Technical Committee has adopted several steps to encourage other countries, especially Africa, to follow these effective procedures. This will be done through publicity in "STOP DISASTERS" and elsewhere, regional meetings, and a senior level workshop at the World Conference in 1994.

## III. IMPLEMENTATION OF INTERNATIONAL PROGRAMMES AND DEMONSTRATION PROJECTS

14. Right from the outset, the Decade aroused strong interest from the international scientific and technical organizations and associations, as well as from national research centres wanting to apply their skills in disaster mitigation. In 1992, international demonstration projects that had been selected earlier by the Scientific and Technical Committee were further developed, with agencies of the United Nations embarking on a number of undertakings. Some of these projects have now entered the operational phase, such as Earthquake Hazard Disaster Management in the Mediterranean Region (SEISMED), and improved tropical cyclone warnings in the south-west Indian Ocean (i.e., south-east Africa).

15. Altogether, demonstration projects now cover a broad variety of disciplines and almost the entire range of hazards of concern to the Decade. For example, participation in training programmes to improve the disaster-management capabilities of vulnerable countries has been very positive. Also there have been some innovative proposals for the application of advanced technology to various phases of disaster prevention and preparedness. Moreover, as called for by the General Assembly, in its resolution 44/236, a number of projects have emanated from the private sector.

16. The overall picture emerging from the information provided to the Committee indicates, however, that there are still difficulties obtaining financial support for a number of demonstration projects. This is owing in part to a lack of communication between development agencies and other sources of funding, on the one hand, and institutions formulating projects, on the other. In this respect, the initiatives taken by the European Development Fund, Germany, Italy and the Netherlands to provide funding specifically for demonstration projects constitute an important development which should be followed by other donors. The full list of demonstration projects, including a short description, is available from the secretariat.

17. As the Decade becomes more widely known, more project proposals are being brought to the attention of the Scientific and Technical Committee for endorsement as Decade-related projects. In order to stimulate the participation of as many agencies and organizations as possible, the Scientific and Technical Committee endorsed the promotion of those projects which meet its previously defined criteria and set up four new project categories for classification purposes:

(a) International demonstration projects: those projects intended to provide clear examples of activities which fall within the framework programme of the Decade as already endorsed by the Committee. In addition, those projects need a very good operational organization and recognized bodies;

(b) International and regional projects: those projects which fall within the framework programme of the Decade and contribute towards achieving one or more of the targets;

(c) National projects: those projects which fall within the framework programme of the Decade and contribute to achieving one or more of the targets;

(d) National demonstration projects: national committees and focal points may wish to designate a limited number of projects in this category, with criteria similar to (a) above, and notify the secretariat.

## IV. ANALYSIS OF THE ECONOMIC BENEFITS AND COSTS OF DISASTER-MITIGATION ACTIONS

18. The Committee recognized the importance of providing better economic justification for investment in disaster reduction, in fact, disaster-mitigation actions, unless taken primarily on humanitarian grounds, are usually based on economic considerations. That is, it is necessary to compare the economic benefits that would be realized by taking preventive action against the damages that would otherwise result. Although many cost-effective disaster-mitigation techniques do now exist and have been used extensively, they often cannot be used in many vulnerable areas of the world because of a lack of knowledge and/or resources. The result is ineffective risk-management policies which hinder efforts towards sustainable development. More information is needed to guide government officials, investors, insurers and institutions involved in economic development on the importance of adopting more efficient risk-management policies.

19. Despite these inadequacies, awareness about the economic aspects of mitigation actions has increased in recent years, largely as a result of the mounting economic losses caused by natural hazards. This enhanced economic vulnerability comes most notably from a greater concentration of people and facilities in urban centres, increasing capital outlays both in industrialized and developing countries, and more complex infrastructures in all countries. Therefore, increased investments in disaster prevention have gained substantial support from many sectors involved in risk management. The growing level of economic losses caused by disasters, as reported by the insurance industry, provides a strong indication of the urgency of addressing the disaster problem and its increasing severity.

20. Risk assessment is needed as a basis for decisions concerning allocation of development resources, that is, how, when, and how much to invest in preventive activities. Assessment of risk must take into account the specific conditions within each country and encompass a meaningful spectrum of the vulnerable economic activity. Both the immediate economic impact and the projected impact on future economic activity should be included.

21. An example of how such considerations can be incorporated in national planning was expressed in a statement provided by the Turkish National IDNDR Committee:

> "A national plan has been prepared with the objective of keeping expected evaluations of earthquake losses to about 0.6 per cent of the GNP. Its realization during IDNDR calls for annual expenditures for research and development equivalent to 0.1 per cent of the GNP."

22. Reviewing the current situation, the Scientific and Technical Committee came to the following conclusions:

(a) Disaster-loss statistics are inadequate and studies on economic risk assessment are needed. Various data on disaster statistics exist but they are neither comparable nor reliable. There is a need for better terminology and definitions. In addition, a bibliography on existing economic studies would be especially helpful;

(b) The economic evaluation of disasters should be related to the economic situation of particular countries, especially in the case of developing countries. The ratios between loss and the gross national product (GNP) or the national debt were mentioned as representative indicators of the economic impact;

(c) Studies on the economic impact of disasters are necessary tools to justify - for disaster managers, decision makers and funding institutions - the importance of mitigation actions and preparedness. Case studies were identified as the best available means to show the cost-effectiveness of mitigation actions. Historical case studies, however, were found to be inadequate, but the possibility of conducting hypothetical case studies (scenarios) was considered;

(d) The private sector should be integrated closely in the risk-evaluation process. Companies with a special interest in risk management, for example those involved in aerospace and information technology, construction, insurance, finance and tourism, could be mobilized to participate in the working process.

23. In view of the above, the Scientific and Technical Committee identified the following objectives and activities to encourage analysis of the economic aspects of disasters:

(a) Improvement of the quality of disaster-related information databases, focusing on terminology, standardization, methodology, and access issues, by convening workshops on economic disaster-loss databases. Representatives of local and regional organizations and universities should be included in the workshops;

(b) Development and publishing of guidelines for risk-assessment procedures as a tool for evaluating economic losses in disaster-vulnerable areas, especially for use in improving national and local capabilities to assess economic exposure. The scientific and economic communities should be mobilized to evaluate the state of the art of the economic impact of disasters and to participate in drafting the guidelines. The guidelines could be tested by assessing the potential impact of natural hazards on economic development at the regional, national and local levels through appropriate development organizations;

(c) Analysis of the link between development and disaster vulnerability, particularly how estimates of disaster potential and prevention could be better included in the economic analysis of project design. Convening a workshop on the threat posed by natural hazards to sustainable development, involving representatives from institutions concerned with development programmes, to develop policy recommendations and methods for including disaster-potential estimates in project evaluation;

(d) Demonstration of the cost-effectiveness of mitigation actions, for example, through comparative case studies on some major disasters. An examination of the benefits of particular actions, for example, the strengthening of buildings to resist earthquakes and strong winds;

(e) Analysis of the practices of the insurance industry; for example, soliciting the views of leading experts on their experience and their activities, particularly on how insurance and reinsurance programmes could be used to promote disaster preparedness and how insurance policies for disaster prevention could be integrated into development programmes. A study on how insurance practices could be used as a means of spreading costs, to promote preparedness and to improve rebuilding and recovery. The role of governments and regional common funds in providing an insurance mechanism for financial losses could also be examined. A review on natural-disaster insurance practices could be published.

## V. IMPLEMENTATION OF THE INFORMATION STRATEGY

"STOP DISASTERS"

24. Eleven issues of the newsletter "STOP DISASTERS" have been published to date. The press run has been gradually increased from 8,000 to 10,000 copies (December 1992) and plans are being considered to reach a target circulation of 30,000 as proposed by the Scientific and Technical Committee. The newsletter is currently distributed in 178 countries to national Decade committees, national agencies involved in disaster management, intergovernmental, non-governmental organizations, research institutes, financial and banking institutes, insurance companies and others who have an interest in the Decade programme. The newsletter is published by the Osservatorio Vesuviano (Italy) in cooperation with the Decade secretariat.

International Day for Natural Disaster Reduction and Support to National Committees

25. In response to requests received from national committees, information packages containing a set of audio-visual productions prepared by the Decade secretariat and related information material from other sources were compiled and dispatched to national committees to supplement their own information programmes. The theme "Natural Disaster Reduction for Sustainable Development", to tie in with the United Nations Conference on Environment and Development, was earlier chosen by the Scientific and Technical Committee as the observance theme for 1992. National committees displayed an active interest in the Day and used the opportunity for promoting the Decade's objectives and for mobilizing support for disaster-reduction activities. Encouraging feedback has been received from national committees which organized varied and innovative observance programmes. The 1993 International Day for Natural Disaster Reduction will be observed under the theme "Stop Disasters: Focus on Schools and Hospitals".

26. An information campaign which would concentrate on the three targets of the Decade on a step-by-step basis was identified to be important to mobilize the efforts of all Decade partners along a clearly defined path which would enable

the achievement of tangible results by the end of the Decade, laying a good basis for continuing efforts in set directions.

27. In each campaign phase, the scientific community, disaster-prone communities, governments in developing and industrialized countries, the media and all other Decade partners would be asked to contribute their share to the achievement of each target which can be planned and also quantified in terms of achievement. The focused approach would also facilitate the mobilization, the allocating of priorities and the channelling of support to a selected number of disaster-prone groups, countries or regions which might seek assistance or collaborative efforts in each case: the phased approach would also ensure that the basic questions as to who is vulnerable to disasters, and at what level would be answered at different levels and addressed sequentially, prior to any attempt at transmitting information on disaster-reduction measures.

## VI. FOLLOW-UP TO THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

28. The contribution of the Scientific and Technical Committee and the Decade secretariat to preparations for the Earth Summit included exchanges with the secretariat of the Conference, as well as representation at the meeting sponsored by the International Council of Scientific Unions (ICSU) of the Agenda of Science for Environment and Development into the 21st Century (ASCEND'21), which was convened to formulate the scientific requirements for the Conference.

29. The concept of the link between natural disaster prevention and sustainable development was recognized and incorporated into the broad plan of action, Agenda 21, 1/ which was a major outcome of the Conference.

30. As the recommendations made by the United Nations Conference on Environment and Development begin to be implemented, follow-up by the Decade will focus on four main areas:

(a) The United Nations Commission on Sustainable Development, which will track progress on Agenda 21;

(b) The United Nations Framework Convention on Climate Change; 2/

(c) Negotiation of a new Convention on Desertification and Drought;

(d) The Conference on Sustainable Development of Small-Island States, to be held in Barbados in May 1994.

It is urged that disaster-mitigation actions be promoted in each of these initiatives in collaboration with the Decade.

31. In this process, the Scientific and Technical Committee also recommended establishing and strengthening institutional links particularly between the main United Nations agencies involved. The World Conference and the Decade newsletter were both identified as platforms for further action and for dissemination of information.

## VII. WORLD CONFERENCE ON NATURAL DISASTER REDUCTION

32. In response to the recommendations by the Scientific and Technical Committee, endorsed by the Special High-Level Council of the Decade, the General Assembly, in its resolution 46/149, also endorsed the convening in 1994 of a world conference on natural disaster reduction, which

> "... would bring together participants from a broad range of sectors of activity, including the scientific and technological sector, the business sector and the industrial sector, as well as non-governmental groups, and which would serve as a substantive contribution to the mid-term review of the implementation of the International Framework of Action for the Decade".

33. At the invitation of the Government of Japan, the Conference will be held at Yokohama from 23-27 May 1994.

34. The Scientific and Technical Committee considered the best way to prepare and organize for the Conference and came to the following plan:

> The Scientific and Technical Committee envisages that the Conference will be a central component of the overall process of promoting and implementing disaster mitigation during the Decade. It will involve all players in the Decade, including all national groups, but also international bodies and non-governmental organizations including scientific and technical associations, the information media and the industrial and financial sectors. The aims of the Conference will include:

(a) A review of how Decade-related activities have been proceeding at national, regional and international levels;

(b) An exchange on how implementation of activities has been proceeding and how plans are developing for the second half of the Decade;

(c) Increased awareness of the progress of disaster reduction policies by high-level officials.

35. It was agreed that the Conference was not one of science and technology but one in which scientific and technical experts would provide information and advice to the policy makers from the participating nations.

36. It is expected that the very announcement of the Conference will stimulate further activities of importance to the Decade. In addition, it will encourage the holding of essential preparatory meetings, both regional and international, relevant to the Conference.

37. The preparatory process has already begun with the formation of a Conference Preparatory Committee and with the decision to request all participating organizations to submit written reports well in advance of the meeting. Special "position papers" may also be commissioned for discussion at the Conference.

38. All national committees or focal points will be asked to submit their written reports by the end of December 1993 for inclusion in a summary. It is important that this phase be preceded by national risk assessments and national and regional meetings where progress towards Decade goals would be reviewed and plans for future measures, including international cooperation, discussed. Scientific and technical groups should fully participate.

39. The Scientific and Technical Committee stresses the importance of this process, which may be as crucial as the Conference itself, especially at the national level, whereby Decade objectives and the progress made towards achieving them would be reviewed in a structured way. For this purpose a format is being drawn up by the secretariat with guidelines for preparing the national reports. Notification will also be given as to the form and content of the summary report in order to encourage consistency in the reports.

40. All nations will be formally invited to the Conference. Additional invitations will be sent to United Nations agencies, non-governmental organizations, the private sector and financial institutions world wide.

41. Six major themes will be addressed at the Conference in addition to regional meetings, as follows:

(a) Costs and benefits of disaster-mitigation measures;

(b) Safer buildings;

(c) Drought management;

(d) Warning and preparedness systems;

(e) Interaction between natural and technological disasters;

(f) Vulnerability of communities and special groups.

42. The Conference should have a specific tie to the Rio Conference and related activities which have followed. For example, the Barbados Conference on Sustainable Development of Small-Island States, to be held in April 1994, may be asked to provide a report to the Conference.

43. Invitations should be issued to non-governmental organizations, United Nations agencies and development banks, outlining the important role they might play in the Conference.

## VIII. STATE OF IMPLEMENTATION OF INTERNATIONAL DEMONSTRATION PROJECTS

### A. Tropical cyclones

#### 1. Tropical Cyclone Disasters - International Council of Scientific Unions/World Meteorological Organization

44. A major event in 1992 was the joint International Council of Scientific Union (ICSU)/World Meterological Organization (WMO) Symposium on Tropical Cyclone disasters, which was held in Beijing from 11 to 16 October with the participation of 50 leading experts in the field. The project has made considerable progress: a cost-effective aerospace monitoring system, AEROSONDE, consisting of unmanned aircraft and satellites, has been developed. This development will improve warning systems for climate-related hazards.

#### 2. Tropical Cyclone Warning System for the South-West Indian Ocean Region - World Meteorological Organization

45. This project is concerned with technology transfer and human resource development. The project document which was submitted by the Indian Ocean Commission to the European Community Development Fund (EDF) has been approved by the EDF and the Governments of the South-West Indian Ocean countries, with an allocation of ECU 5 million in funds.

### B. Volcano hazards

#### 1. Reducing Volcanic Disasters in the 1990s - International Council of Scientific Unions

46. This project is being implemented through the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI), which has selected seven "high-risk" volcanoes to serve as foci for the programme activities. So far, six volcanoes are being monitored. The impact of the recent eruption of Mt. Galeras (Colombia), one of the target volcanoes, was cited as evidence of the importance of this project.

#### 2. International Mobile Early-Warning System for Volcanic Eruptions - United Nations Educational, Scientific and Cultural Organization

47. This programme is now being sponsored by the United National Educational, Scientific and Cultural Organization (UNESCO) and the World Organization of Volcano Observatories (WOVO). In May 1992, a UNESCO mission visited Central America with the aim of establishing cooperation on volcano monitoring in association with the IPG (Institut de Physique du Globe) (France) by installation of a volcanic gas-analysis facility and a seismic network equipped with mobile seismographic equipment.

## C. Earthquake hazards

### 1. Earthquake Hazards, Global Seismic Hazard Assessment Programme - International Council of Scientific Unions

48. The programme planning meeting held in June 1992 was attended by 70 participants representing countries or seismological and geological associations. Implementation of the programme entails setting up of nine regional centres for hazard assessment.

### 2. Earthquake Hazard Disaster Management in the Mediterranean Region (SEISMED) - United Nations Department of Humanitarian Affairs

49. The first phase has been completed with the publishing of the proceedings of three workshops with practical applications in earthquake-hazard mitigation in the Mediterranean region.

### 3. Minimizing Earthquake Vulnerability - International Association of Seismology and Physics of the Earth's Interior

50. This project is being administered from a secretariat in Beijing where a database is being built up on the activities of the International Association of Seismology and Physics of the Earth's Interior (IASPEI). In October 1992, the secretariat also hosted the Second International Conference on Continental Earthquakes. Other international contacts (with the International Institute of Seismology and Earthquake Engineering in Japan and the International Centre for Theoretical Physics in Italy) are helping to promote education and training activities.

## D. Drought hazards

### Drought Hazard Assessment, Famine Disasters and Vulnerable Food Systems - International Council of Scientific Unions

51. Implementation of this project is supported financially by France, Germany and the United Kingdom. Three pilot projects (People's Coping Strategies, Famine Early Warning, Related Development Policies) will be carried out.

## E. Information systems

### 1. Disaster Statistics; Disaster History Database - Department of Humanitarian Affairs

52. A pilot database has been developed with technical assistance from Japan. Data is now being fed into the system.

### 2. Database Network Development; In-country Disaster Management Information System - Department of Humanitarian Affairs

53. A network architecture is being designed.

3. International Decade for Natural Disaster Reduction/UNDRO Disaster Terminology Project - Department of Humanitarian Affairs/International Decade for Natural Disaster Reduction

54. Assisted by the Decade National Committees of Colombia, the former Czechoslovakia, France and Switzerland, UNDRO and the Decade secretariat has published a glossary of basic terms related to disaster management.

## F. Education, research and training

1. Disaster Management Training Programme - United Nations Development Programme/Department of Humanitarian Affairs

55. Country workshops have been completed in 18 countries and 5 regional sessions. Training material has been provided to more than 100 countries.

2. Training Materials for Natural Disaster Reduction - United Nations Educational, Scientific and Cultural Organization

56. In 1991 and 1992, focusing on earthquakes and floods, training materials on disaster reduction were developed for civil service and staff of non-governmental organizations. The project is supported by "funds-in-trust" from the Netherlands.

3. "Roving Seminar" Educational Project - World Federation of Engineering Organizations

57. The project aims at dissemination of disaster mitigation technology. The first seminar will take place in the Caribbean region.

## G. Risk assessment and preventive actions

1. Comprehensive Risk Assessment - World Meteorological Organization

58. The project aims at promotion of a comprehensive approach to risk assessment and enhancing the effectiveness of disaster mitigation efforts. In March 1992, WMO convened a meeting of experts and representatives of international organizations to develop plans for the implementation of this project.

2. Design of Structures to Withstand Earthquakes and/or Extreme Winds - Union of International Technical Association/World Federation of Engineering Organizations

59. This project will propose a desirable design structure to withstand earthquake and wind hazards.

3. System for Technology Exchange for Natural Disasters (STEND) - World Meteorological Organization

60. The aim of the project is the identification and facilitation of technology transfer for use in reducing the impact of hazards.

4. Reconditioning of Existing Adobe Housing to Mitigate Earthquake Effects - Regional Centre of Seismology for South America (CERESIS)

61. The project involves, inter alia, testing of construction material as well as of full-scale adobe structures in order to ascertain their resistance to seismic motion. This project is supported financially by Germany.

## H. Public health

1. Strengthening of Health Sector Disaster Preparedness and Management in Indonesia - World Health Organization

62. Aiming at providing technical support in epidemic investigation, hospital disaster planning and others, several assessment missions to Indonesia have been conducted for planning implementation.

2. Mapping Health Emergency Preparedness and Response in Africa - World Health Organization

63. The project is aiming at identification of health-hazard-prone areas in Africa. A risk-mapping manual is being compiled for use at the community level.

3. Improved Health Surveillance for More Effective Disaster Response - World Health Organization

64. The project develops measures to respond more effectively to disasters in public health, focusing on cerebrospinal meningitis.

4. Disaster Mitigation in Hospital Facilities in Latin America - World Health Organization

65. A manual "Disaster Mitigation Guidelines for Hospital and Other Health Care Facilities in the Caribbean" has been published, and a Spanish translation is planned. A Spanish language training package will be available in early 1993.

## I. International centres for research and training in mitigation of risks

66. A survey is being conducted in Morocco in collaboration with Tecnopolis-CSATA (Italy) for the establishment of an international centre.

## J. Mega-cities

### 1. Physical Instability of Mega-cities - International Association of Engineering Geology/International Union of Geological Sciences

67. Los Angeles, La Paz, Moscow and Tokyo are being studied as research target cities.

### 2. Protection and Construction of Mega-cities - Union of International Technical Associations/World Federation of Engineering Organizations

68. The project entails collecting information of two major disasters caused by flash floods in southern France in 1992 for modelling mega-city disasters.

## Notes

1. See Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992 (United Nations publication, Sales No. E.93.I.8), vol. I, Resolutions Adopted by the Conference, resolution I, annex II.

2. See A/AC.237/18 (Part II)/Add.1 and Corr.1.

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